IN THE CLAIMS:

Please amend claim 1 as follows:

1. (Twice Amended) An aqueous solution comprising:

potassium sorbate dissolved in tap water or deionized water at a concentration of about 0.3 %, by weight, and the aqueous solution having a pH of 4.5 or higher;

providing a solution that has lower electrical conductivity and lower oxygen content than tap water such that when the solution is exposed to a metal surface the metal surface will remain free of rust, corrosion and scale.

REMARKS

The Office Action has been carefully considered.

Claims 1 and 2 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,027,687 to Nakajima et al. Reconsideration and withdrawal of this rejection are respectfully requested.

The patent to Nakajima et al. discloses a method of suppressing corrosion in the water tubes of a boiler by regulating the concentration of sulfate ions SO_4^{-2}. The Nakajima et al. reference acknowledges that, prior to their invention, it was known that the increased concentration of SO_4^{-2} in a liquid causes a considerable increase in corrosion. In the Nakajima et al. reference, the method of suppressing corrosion is accomplished by injecting a sulfite base oxygen scavenger into the water supplied to the boiler. The Nakajima et al. reference utilizes a sulfite-based oxygen scavenger composition comprising: 3-30 weight % of at least one selected from a group consisting of Na_2SO_3, K_2SO_3, $NaHSO_3$ and $KHSO_3$; 1-20 weight % of NaOH or KOH; 0.2-2 weight % of potassium sorbate; and 5-500 ppm of $CoSO_4$. It is noted that, in column 3, lines 6-8 of Nakajima et al., it is stated, "It is noted that potassium sorbate acts as a stabilizer for the oxygen scavenger during the storage of agents."

Thus, it is clear that Nakajima et al. includes 0.2-2 weight % of potassium sorbate with the sulfite base oxygen scavenger to function as a stabilizer for the principal oxygen

scavenger and does not rely upon the potassium sorbate to prevent corrosion in the water pipes. The Nakajima et al. method relies upon the oxygen scavenger rather than the potassium sorbate to decrease the oxygen dissolved in the feed water.

Furthermore, the Nakajima et al. reference does not suggest that the potassium sorbate functions to control or limit the pH of the boiler water. Rather, Nakajima et al. states in column 3, lines 2-5 that, "As to the agents used for boilers, for further enhancement of anticorrosion effect, sodium hydroxide NaOH, potassium hydroxide KOH or the like is added as a pH regulator." Still further, the reference to Nakajima et al. includes no teaching whatsoever that his solution has a lower electrical conductivity than tap water, and there is no basis to assume that it does.

Thus, the Nakajima et al. reference fails to teach or suggest that an aqueous solution comprising potassium sorbate dissolved in tap water or deionized water at a concentration of 0.3% by weight, or higher, the aqueous solution having a pH or 4.5, or higher, will result in providing a solution that has lower electrical conductivity and lower oxygen content than tap water such that, when the solution is exposed to a metal surface, the metal surface will remain free of rust, corrosion and scale. In fact, the Nakajima et al. reference specifically states that it is the oxygen scavenger that is contained in their solution that reduces the oxygen content of the solution.

The Examiner cites MPEP 2112.01 in support of this rejection stating, "compositions comprising the same components present in the same amounts presumably have the like properties and characteristics." It should be noted that, following the number and title of MPEP 2112.01, the following bold and all capital letters summary of this section appears:

> **PRODUCT AND APPARATUS CLAIMS – WHEN THE STRUCTURE RECITED IN THE REFERENCE IS SUBSTANTIALLY IDENTICAL TO THAT OF THE CLAIMS, CLAIMED PROPERTIES OR FUNCTIONS ARE PRESUMED TO BE INHERENT.**

The oxygen scavenger comprising 3-30 weight % of at least one selected from a group consisting of Na_2SO_3, K_2SO_3, $NaHSO_3$ and $KHSO_3$; 1-20 weight % of NaOH or

KOH; 0.2-2 weight % of potassium sorbate; and 5-500 ppm of $CoSO_4$ disclosed in the applied reference to Nakajima et al. is clearly not substantially identical to the potassium sorbate dissolved in tap water or deionized water at a concentration of 0.3%, by weight, or higher, the aqueous solution having a pH of 4.5, or higher, that is recited in Applicant's claim 1.

Thus, without more, this section of the MPEP does not support the Examiner's position. Upon further review of MPEP 2112.01, it is noted that the *Titaniium Mtals Corp. v Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) is cited. In this case, the Applicant's claims were directed to a titanium alloy containing 0.2-0.4% Mo and 0.6-0.9% Ni and the alloy was claimed to having corrosion resistance properties. A Russian article disclosed a titanium alloy containing 0.25% Mo and 0.75% Ni but was silent as to corrosion resistance properties. The Federal Circuit held that the claim was anticipated because the percentages of Mo and Ni were squarely within the claimed range. The court went on to say that is was immaterial what properties the alloys had or who discovered the properties because the composition is the same and thus must necessarily exhibit similar properties. The Federal Court stated that real issues were (1) what do the claims cover and (2) is what they cover new? In the instant case the claims cover an aqueous solution comprising potassium sorbate dissolved in water at a specific concentration and having a certain pH that provides a solution that has lower electrical conductivity and lower oxygen content than water such when the solution is exposed to a metal surface the metal surface will remain free of rust, corrosion and scale. Applicant's claimed aqueous solution is clearly not disclosed by the Nakajima et al. reference. The Nakajima et al. aqueous solution contains 3-30 weight % of at least one selected from a group consisting of Na_2SO_3, K_2SO_3, $NaHSO_3$ and $KHSO_3$; 1-20 weight % of NaOH or KOH; 0.2-2 weight % of potassium sorbate; and 5-500 ppm of $CoSO_4$. Although the solution of Nakajima et al. includes potassium sorbate as one of several ingredients the solution is not the same.

It is submitted that claims 1 and 2 are not anticipated by U.S. Patent No. 6,027,687 to Nakajima et al. under 35 U.S.C. § 102(e). Reconsideration and withdrawal of this rejection are respectfully requested.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,374,174 to Stricklin et al. Reconsideration and withdrawal of this rejection are respectfully requested.

The Stricklin et al. patent is directed towards the concept of impregnating or coating a sheet, such as Kraft paper, with a solution containing about 10% to about 70% by weight, usually about 25% to about 35% by weight, of potassium sorbate. Aluminum test panels were then sandwiched with the impregnated sheets. The sandwich was suspended in a one quart jar having a water-tight lid. The jar with the metal/paper sandwich was placed in a freezer for 7 days. After 7 days, the jar was removed from the freezer and immediately placed in a ventilated oven at 85° F. for 7 days. Following this procedure, the edges and surfaces remained shiny.

Claim 1 recites an aqueous solution comprising potassium sorbate dissolved in water at a concentration of about 0.3% by weight, and the aqueous solution having a pH of 4.5 or higher. Applicant has amended claim 1 by deleting "or higher" that followed "0.3% by weight." A solution containing about 0.3% of a substance cannot be considered to be the same as a solution containing 10% to 70% of the solution. Thus, this significant difference between what is recited in the claim and what is disclosed in the applied reference must be recognized as a difference between the prior art and the claim at issue and cannot be ignored.

The Examiner has conceded that the Stricklin et al. reference does not contain a specific disclosure of the pH of its solution. It is the Examiner's position that it would be reasonable to expect, given the superior results against corrosion of the Kraft paper treated with potassium sorbate, that the pH of the solution would have to be in a range such that these results would occur. The Examiner further states that it is known in the art of metal corrosion that low pH is one of the principal causes of corrosion, and that one of ordinary skill in the art would then realize that a high pH would be necessary to prevent unwanted corrosion from occurring. The Examiner does not include numbers in the reference to the pH "range such that these results would occur." In column 1, lines 33-35 of the Nakajima et al. patent, the following is stated:

"According to the water quality management in JIS (Japanese Industrial Standards), the pH of boiler water should be controlled to be abound 11 to 11.8."

Also, in the Nakajima et al. patent the following is stated in column 1, lines 58-62:

As a result, it was found that the anticorrosion effect of filming type agents is, in general, largely affected by pH, and sufficient anticorrosion effect could not be expected in a low pH region, i.e., pH=7-9 .

Assuming that the Nakajima et al. patent accurately reflects what one of ordinary skill in the art would consider the range of pH that would be necessary to prevent unwanted corrosion from occurring, then this person of ordinary skill in the art would not expect Applicant's solution that has a pH as low as 4.5 to prevent corrosion from occurring. In fact, it would be a new and unexpected result to one having ordinary skill in the art that Applicant's solution would prevent corrosion.

Furthermore, this application contains a DECLARATION UNDER 37 CFR 1.132 in which clear and convincing evidence has been presented of the unexpected results that are obtained as a result of this invention.

For all of the above reasons, Applicant requests that this rejection be reconsidered and withdrawn.

Thus, Applicant maintains that his invention, as set forth in claims 1 and 2, is not anticipated by or obvious over the applied prior art references U.S. Patent No. 6,027,687 to Nakajima et al. and U.S. Patent No. 4,374,174 to Stricklin et al. Applicant has

presented in this application clear and convincing evidence that his invention constitutes an unexpected result to one having ordinary skill in the art of preventing rust and corrosion. Accordingly, Applicant requests reconsideration and allowance of this application.

Respectfully submitted,

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APPENDIX

1. (Twice Amended) An aqueous solution comprising:

potassium sorbate dissolved in tap water or deionized water at a concentration of about 0.3 %, by weight, [or higher,] and the aqueous solution having a pH of 4.5 or higher;

providing a solution that has lower electrical conductivity and lower oxygen content than tap water such that when the solution is exposed to a metal surface the metal surface will remain free of rust, corrosion and scale.